

EXHIBIT G

Exponent®

**Ajala v. W. M. Barr &
Company et al.**

**Expert Report of
Dr. Timothy J. Myers**

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Company et al.**

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Limitations

At the request of Swartz Campbell, LLC, Exponent Engineering, P.C. (Exponent) investigated the efficacy, ignition energy, and electrical conductivity of Goof Off Professional Strength Remover (PSGO). The scope of the services performed during this investigation may not adequately address the needs of other users of this report, and any re-use of this report or its findings, conclusions, or recommendations presented herein are at the sole risk of the user. The opinions and comments formulated during this assessment are based on observations and information available at the time of investigation. No guarantee or warranty as to future life or performance of any reviewed condition is expressed or implied.

The findings presented herein are made to a reasonable degree of scientific certainty. We have made every effort to accurately and completely investigate all areas of concern. If new data becomes available or there are perceived omissions or misstatements in this report regarding any aspect of those conditions, we ask that they be brought to our attention as soon as possible so that we may have the opportunity to fully address them.

Executive Summary

Exponent was retained by Swartz Campbell, LLC, to investigate the efficacy, electrical conductivity, and spark ignition energy of Goof Off Professional Strength Remover.

Qualifications

My curriculum vitae, including a list of publications, are provided in Appendix A. I earned a B.S. in Forest Resources (Pulp and Paper Science) from the University of Washington and a Ph.D. in Chemical Engineering from the University of California. I am a licensed professional engineer in multiple states.

I have over eighteen years' experience investigating fires and explosions and hold certifications from the two primary fire investigation professional organizations in the United States. I am a Certified Fire and Explosion Investigator (CFEI) in accordance with the National Association of Fire Investigators (NAFI) and a Certified Fire Investigator (CFI) in accordance with the International Association of Arson Investigators (IAAI).

I am a member of several National Fire Protection Association (NFPA) technical committees that write standards for the prevention and mitigation of combustible dust fires and explosions, including NFPA 69. I am the co-chair of the ASTM E27 Committee on the Hazard Potential of Chemicals that writes standards for determining the ignition and combustion characteristics of chemicals. I am experienced in evaluating the efficacy and flammability of chemical products.

Materials Reviewed

As part of my analysis I have reviewed materials produced by the parties in the matter as disclosed during discovery, as well as codes, standards, and other technical references as they pertain to this matter, including the following plaintiff's expert reports:

- Expert report of Dr. James E. Hanson, dated June 6, 2017

- Expert report from Mr. Robert Malanga, dated June 6, 2017

A full list of materials reviewed in this matter is provided in Appendix B.

Experimental Testing

As part of my analysis I performed the following experimental tests, the details of which are included in the main section of the report:

1. Paint removal tests using Goof Off Professional Strength Remover, Goof Off Heavy Duty, and Mötsenböcker's Lift Off Latex Paint Remover
2. Electrical conductivity measurement of Goof Off Professional Strength Remover
3. Spark ignition testing of Goof Off Professional Strength Remover

Findings and opinions

Based on my education, background, training, experience, testing, analysis, and review of the relevant materials, I offer the opinions summarized below and the opinions in the main body of my report to a reasonable degree of scientific certainty. If any additional information becomes available, I reserve the right to modify or amend these findings.

1. Goof Off Professional Strength Remover is a safe and effective paint removal product when used in accordance with the manufacturer's instructions and guidelines.
2. Goof Off Professional Strength Remover is a superior product to alternative products with regard to removing spots of latex paint, and rolled-on layers of oil-based paint. The other products I have tested are not comparable to Goof Off Professional Strength Remover.
3. Ignition of Goof Off Professional Strength Remover vapors by static electricity as hypothesized by plaintiff investigators is not plausible and is not consistent with the available evidence and testimony.

- a. Goof Off Professional Strength Remover is a conductive liquid packaged in a metal container. As such it is unlikely to develop static charge buildup when poured.
 - b. The minimum spark ignition energy required to ignite the vapors of Goof Off Professional Strength Remover at room temperature was 10 mJ in my testing.
4. Mötsenböcker's Lift Off Latex Paint Remover would also be above its flash point and ignitable under the conditions Mr. Ajala was using paint remover.

1. Background

On August 30, 2015, around 1:00 p.m. to 2:30 p.m., Mr. Joseph Ajala was attempting to remove 10 to 15 spots of paint, from the kitchen floor of a vacant apartment he was preparing to rent, using a one gallon metal container of Goof Off Pro Strength Remover (PSGO).¹ The spots of paint on the kitchen floor, which Mr. Ajala describes as the size of “the tip of a finger”² were a result of a previous painting of the kitchen, but Mr. Ajala does not recall exactly when this painting occurred.³ The specific brand and type of paint being removed is unknown. It is likely that the paint was fully cured at the time of the incident, as paints typically cure within one to four weeks of application. As Mr. Ajala was pouring the product, it allegedly ignited, resulting in burn injuries to the bilateral lower extremity, right forearm, and face.⁴ The temperature at the time of the incident was reported to be between 87°F and 90°F with a relative humidity between 39% and 45%.⁵ Prior to using the PSGO, Mr. Ajala had reportedly opened the nearby windows and doors to the kitchen.⁶ PSGO contains approximately 80 to 83 wt% acetone, 10 to 17 wt% xylene, 0 to 7 wt% mineral spirits, and 0 to 3wt% methanol.^{7,8}

¹ Deposition of Mr. Joseph Ajala, dated December 15, 2016, pp. 71, 72, 74, 75, 87, 90, 113, 114

² Deposition of Mr. Joseph Ajala, dated December 15, 2016, pp. 89

³ Deposition of Mr. Joseph Ajala, dated December 15, 2016, pp. 77,78

⁴ Jacobi Medical Center Medical Record for Mr. Joseph Ajala, dated September 1, 2016, pp. 1

⁵ Local Climatological Data from La Guardia Airport provided by the National Environmental Satellite, Data, and Information Service

⁶ Deposition of Mr. Joseph Ajala, dated December 15, 2016, pp. 119

⁷ Goof Off Pro Batch Card, Formula date 7/13/12

⁸ Goof Off Pro Batch Card, Formula date 5/22/15

2. Experimental Testing

2.1. Paint Removal Tests

I investigated the efficacy of PSGO as well as two water based paint removers: Goof Off Heavy Duty and Mötsenböcker's Lift Off Latex Paint Remover (flammable). According to the product Safety Data Sheet (SDS), Goof Off Heavy Duty is a non-flammable liquid.⁹ According to the product SDS, Mötsenböcker's Lift Off Latex Paint Remover contains 1-8 wt% acetone and is a flammable liquid with a flash point of 76°F.¹⁰ These are the same paint removers tested by Dr. Hanson in his report dated June 6, 2017.

Paint removal efficacy testing was performed on 6 in. x 6 in. x 5/16 in. Marazzi brand ceramic tiles. Four different types of interior or interior/exterior paint and two different paint patterns were tested. The four types of paint used were:

- A. Behr Premium Plus interior flat paint & primer in one (water-based latex paint).
- B. Glidden Diamond pure white flat enamel interior paint & primer (water-based latex paint).
- C. Behr oil-base semi-gloss enamel paint.
- D. Behr alkyd satin enamel (water based).

Paint was applied using two different methods:

- 1. Using a micropipette set to 250 µL,¹¹ droplets of paint were applied onto the tiles from chest height (between 50 and 60 inches).¹²

⁹ Safety Data Sheet, Goof Off Heavy Duty, Revision 04/16/2015

¹⁰ Safety Data Sheet, Mötsenböcker's Latex Paint Remover, Revision 05/08/2015

¹¹ Micropipette was tested to verify desired volume of 250 µL of liquid was transported.

¹² Due to the high viscosity of paint, the volume deposited per drop was likely less than 250 µL. Resulting paint spots were approximately 0.5 to 1 inch in diameter.

2. A circular mask was placed on the tiles to create a consistent circular pattern. Paint was applied using 2 in. foam rollers onto the tiles and was applied until the layer was opaque.

The painted tiles were then cured at approximately 88°F for one week in convection ovens prior to efficacy testing. Instructions on the different paint containers indicate that the paint should not be washed or cleaned for one to four weeks. Thus, some of the paints may be more difficult to remove when cured for longer than one week. Drops of oil-based Paint C were not tested because they did not appear to be fully cured. Thin layers of the oil-based Paint C were tested. I reserve the right to supplement my findings with additional testing of painted samples after further curing is complete.

For the investigation of the efficacy of the three paint removers, the PSGO was used first on ceramic tiles and the time for complete removal using a cloth was measured. Subsequently, the Goof Off Heavy Duty and the Mötsenböcker's Lift Off Latex Paint Remover were applied (following the product instructions) and were wiped off with a cloth for the same amount of time that it took for the PSGO to remove the paint from the tile surface. The tests were repeated three times by three separate individuals performing the tests.

The instructions for the each of the paint removers are as follows:

- PSGO: “Apply to a cloth, blot, rub lightly until spot is removed.”
- Goof Off Heavy Duty: “1. Apply directly. 2. Allow Goof Off to penetrate for a couple of minutes.¹³ 3. Wipe off with a clean, absorbent cloth.”
- Mötsenböcker's Lift Off Latex Paint Remover: “1. Thoroughly spray area and wait 60 seconds. 2. Gently agitate with a soft brush if necessary. 3. Wipe with a clean white cloth, or rinse clean if possible. Repeat if necessary.”

¹³ In this testing, the Goof Off was allowed to penetrate for 2 minutes prior to wiping with a cloth.

Photographs were taken before and after the attempted removal of paint. Example images from one set of tests on one latex paint are shown in Figure 1. Full results of the paint tests are provided in Appendix C.

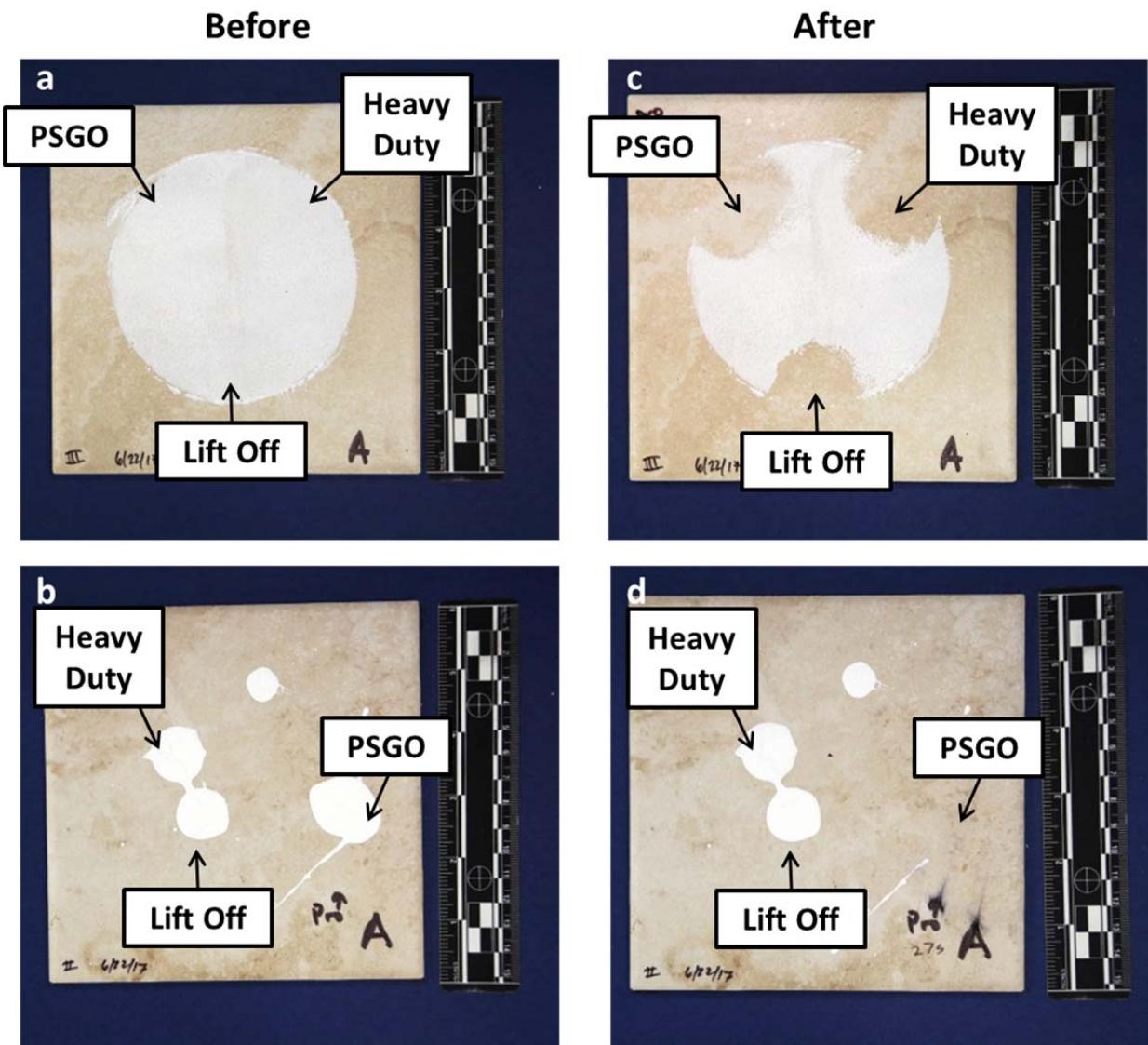


Figure 1. Paint removal tests with PSGO, Goof Off Heavy Duty, and Mötsenböcker's Lift Off Latex Paint Remover for Paint A. Labels show portions of paint cleaned with each paint removal product. Tiles shown before and after paint removal products were used.

As shown in Figure 1 and Appendix C, the ability to remove thin layers of the three water-based paints was similar for all three products. However, PSGO was the most effective at removal of

thicker droplets of the tested water-based paints and the only effective remover for the tested thin layers of oil-based paint applied with rollers. The PSGO completely removed the droplets of oil-based paint, while most of the paint droplets remained after cleaning with the other removers. In particular, for cleaning paint drops similar to those described by Mr. Ajala, the PSGO is a superior product; the other products were not comparable.

2.2. Electrical Conductivity Measurements

The electrical conductivity of the PSGO versus its major components of acetone and xylene were measured. The electrical conductivity of three 20 to 25 mL samples of each product was measured using the conductivity probe by dipping the probe into the solution and waiting until the reading stabilized. The cell constant of the conductivity probe was determined by normalizing to the known conductivity of acetone.¹⁴

The average of the three measured conductivity values for each sample and the calculated conductivity values using the known conductivity of acetone is reported in Table 1. As shown, the measured electrical conductivity of the PSGO is over 3.5 times the electrical conductivity of acetone. As described in more detail in Section 3.2, it is classified as a conductive liquid rather than a non-conductive liquid making it unlikely to accumulate significant static charge during pouring.

Table 1 - Electrical Conductivity Measurements

Conductivity ($\mu\text{S}/\text{cm}$)	
Xylene	< 0.001
Acetone	0.06
PSGO	0.22

¹⁴ 0.06 $\mu\text{S}/\text{cm}$, from Britton, L. G. *Avoiding Static Ignition Hazards in Chemical Operations*, Center for Chemical Process Safety, 1999, p. 227

2.3. Spark Ignition Tests

I investigated the potential of a spark to ignite PSGO vapors using a MIKE3 Minimum Ignition Energy Apparatus manufactured by Kuhner AG. The MIKE3 apparatus is capable of generating capacitive sparks from 1 millijoule (mJ) to 1,000 mJ.

A cloth rag soaked with approximately 50 mL of PSGO was prepared and placed in the quartz chamber as shown in Figure 2. After placing the rag in the chamber, a spark of either 1, 3, or 10 mJ was repeatedly activated for up to 2 minutes at a rate of about 1 spark every 5 seconds. The test was performed 3 times; once at each spark energy level.

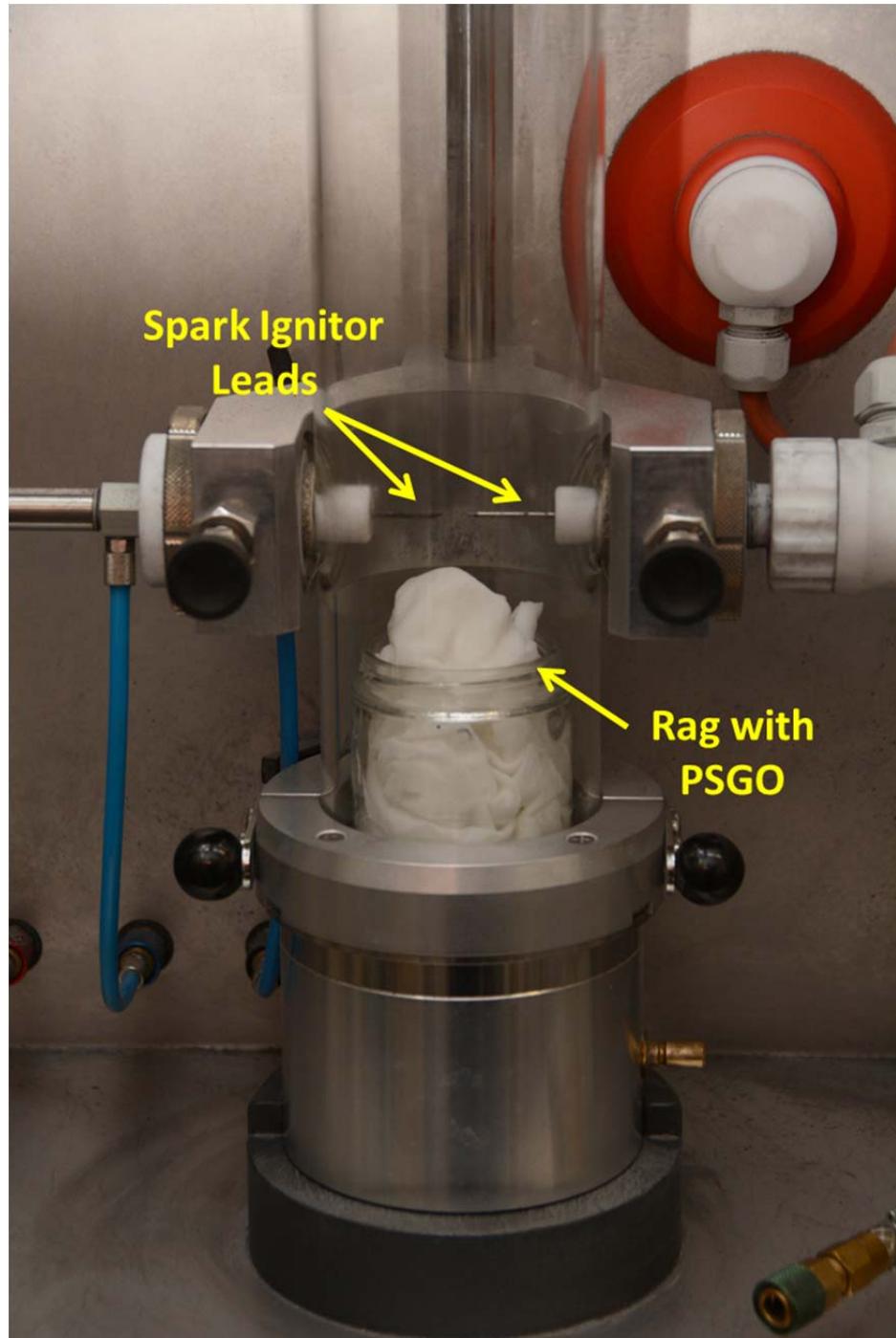


Figure 2. Experimental Setup for Spark Ignition Energy Testing

Images of the sparks from the 1, 3, and 10 mJ tests are presented in Figure 3. The 1 and 3 mJ spark was not able to ignite the vapors. As shown in Figure 3c, the vapors from the PSGO were ignited with 10 mJ of energy on the fifth ignition attempt, approximately 40 seconds after the

rag had been placed in the chamber. As described in more detail in Section 3.1, this ignition energy is much higher than the energy calculated by Dr. Hanson, indicating the mixture is more difficult to ignite by static electricity.

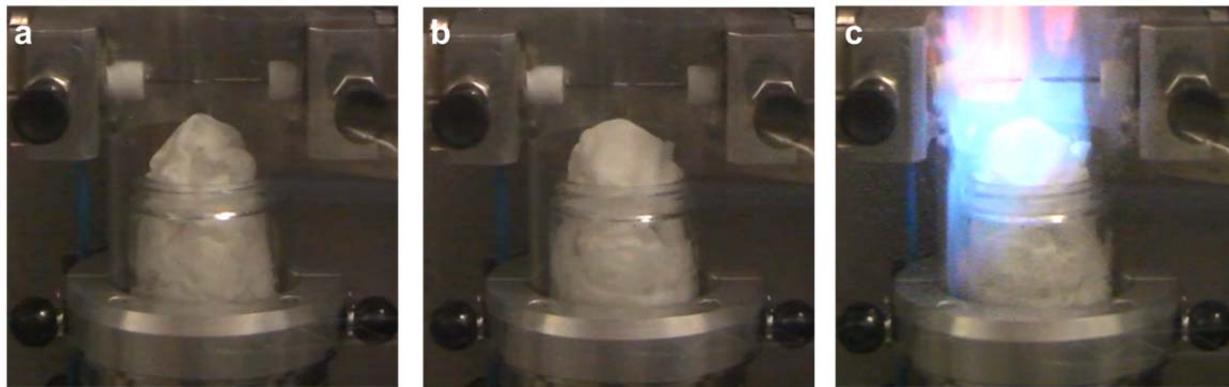


Figure 3. Spark Ignition Energy Testing using a (a) 1 mJ spark, (b) 3 mJ spark, and (c) 10 mJ spark.

3. Review of Dr. Hanson Expert Report

3.1. Minimum Ignition Energy of PSGO

On Page 6 of Dr. Hanson's report, he states that "a very small spark would be sufficient to ignite" PSGO. He bases his opinion on two arguments:

1. The minimum ignition energy (MIE) of the PSGO at room temperature is 0.2 mJ (the same MIE as xylene, a component of PSGO).
2. At the time of the incident, the MIE of the PSGO will be a factor of two lower due to temperature and turbulence effects.

However, both conclusions by Dr. Hanson are unfounded, inconsistent with the scientific literature, and inconsistent with my testing.

Dr. Hanson attempted no testing of PSGO to measure the ignition energy nor does he reference any scientific literature to justify his hypothesis that the ignition energy of PSGO is reflected by the minor and less volatile component, xylene, as compared to the more volatile and major component acetone. Vapor liquid equilibrium (VLE) data for a 17 wt% xylene mixture with 83 wt% acetone indicate that the vapors of the mixture will be approximately 98 volume% acetone with only 2 volume% xylene.¹⁵ Thus, it would be expected that the MIE of the PSGO vapors would be more similar to acetone rather than xylene, the opposite of Dr. Hanson's assumption. Based on these relative concentrations, it is unlikely that xylene would significantly impact the MIE of the mixture. It should be noted that the MIE represents a lower bound for the ignition energy, which under most real-world conditions, will not be sufficient to ignite a mixture. This is demonstrated in my testing of the ignition energy, where it required 10 mJ to cause ignition of a PSGO soaked rag. Based on my testing and analysis, Dr. Hanson's purported MIE of 0.2 mJ underestimates the ignition energy required for PSGO at room temperature by a factor of 15 to 50.

¹⁵ Based on thermodynamic data available from the Dortmund Data Bank available at (<http://www.ddbst.com/>)

Dr. Hanson also misrepresents the data on the effects of temperature on the MIE of a fuel in a report investigating the impact of temperature on the MIE of jet fuel. The MIE is influenced by two factors: 1) the concentration of the flammable vapor, and 2) the temperature of the flammable vapor. In the cited report, the concentration of the flammable vapors is not held constant: it is allowed to reach the vapor-liquid equilibrium condition.¹⁶ In other words, the concentration of the flammable vapors at the higher temperature is greater than the concentration of the flammable vapors at the lower temperature. In the jet fuel example used in Dr. Hanson's report, the reduction in the MIE is primarily due to an increase in the concentration of the flammable vapors and only marginally impacted by the increase in temperature. To properly assess the impact of temperature on the MIE of a flammable vapor, the concentration must be held constant. Dr. Hanson appears to not understand the basics of chemical thermodynamics.

The impact of temperature on the MIE of a flammable vapor is a well-known and well-characterized phenomenon. For a given flammable vapor, the relationship between the MIE and temperature can be calculated if specific parameters are known.¹⁷ For hydrocarbons, the MIE will decrease by a factor of 2 over approximately 75°C (135°F), not 5°C (9°F) as Dr. Hanson estimates.

The impact of fluid velocity and turbulence is also well established in the literature, but with opposite effects of what is described by Dr. Hanson. Dr. Hanson references a single paper¹⁸ in which it is observed that for certain mixtures that have a high Lewis number (Le), that turbulence can increase the likelihood of ignition. Dr. Hanson does not perform any calculation to estimate the Lewis number of the flammable mixture that would have occurred during the incident to justify whether or not this paper is even relevant to the incident.

¹⁶ Shepherd et al. "Spark Ignition Energy Measurements in Jet A," *Explosion Dynamics Laboratory Report FM97-9*, January 24, 2000, p. 15-16.

¹⁷ Barnett, Henry C., and Hibbard, Robert R. *Basic Considerations in the Combustion of Hydrocarbon Fuels with Air*, NASA Technical Report 1300, 1957, page 314.

¹⁸ Wu et al. "Facilitated Ignition in Turbulence through Differential Diffusion," *Physical Review Letters*, Vol 113, Issue 2, July 2014.

It is a well-accepted principle, that under most scenarios increasing the velocity and turbulence of the gas mixture increases the difficulty of ignition.¹⁹ Therefore, Dr. Hanson's reliance on a single reference that has not been shown to be applicable to this incident is unreliable and inconsistent with established fire science.

3.2. Electrical Conductivity of PSGO

In Dr. Hanson's analysis of the charge buildup while pouring PSGO (pp 7-10 of Hanson report), he assumes that the PSGO is a non-conductive liquid, similar to xylene. However, Dr. Hanson neither measured the conductivity of PSGO nor attempted to apply a scientific methodology to calculate the mixture conductivity. As shown in Section 2.2 above, I measured the conductivity of PSGO and found it to be approximately 3.5 times more conductive than acetone. This is explained by the effects of minor concentrations of highly conductive components such as methanol or water. Methanol is listed as a component of PSGO on its formula batch cards. Thus, contrary to Dr. Hanson's opinion, it would be less susceptible to charge buildup than either xylene or acetone.

NFPA 77 (2014) defines conductive as:

*“3.3.11 **Conductive**. Possessing the ability to allow the flow of an electric charge; typically, liquids possessing a conductivity greater than 10^4 picosiemens per meter (pS/m) or solids having a resistivity less than 10^5 ohm-meters ($\Omega\text{-m}$).”*

The conductivity of PSGO was measured to have a conductivity over 1,000 times greater than the 10^4 (pS/m) threshold. This clearly makes the PSGO a conductive liquid, not a non-conductive liquid as stated by Dr. Hanson.

¹⁹ Barnett, Henry C., and Hibbard, Robert R. *Basic Considerations in the Combustion of Hydrocarbon Fuels with Air*, NASA Technical Report 1300, 1957, page 311.

3.3. Spark Formation

Dr. Hanson's hypotheses are inconsistent with the available evidence. As previously discussed in Section 4.1, the real world spark energy required for such an ignition is likely 15 to 50 times greater than his estimate of 0.2 mJ. Therefore, a spark with sufficient energy to have caused the ignition would have been perceivable, at least 1 mJ.²⁰ In his deposition, Mr. Ajala does not state that he felt or saw a spark occur.

Had Mr. Ajala become charged while walking around the house, for which there is no evidence to support, when he touched the metal PSGO container, the charge would have equalized between himself and the container. Furthermore, because he was kneeling on the floor and the container was originally placed on the floor, the energy would have been dissipated to ground.

Mr. Ajala would have already been holding the rag before he started pouring, and therefore, any charge transfer between him and the rag would have already occurred before he poured the PSGO. Furthermore, a discharge from Mr. Ajala, the container, or the conductive PSGO to an insulator, which would be a brush discharge, would not have had sufficient energy to ignite the PSGO vapors as brush discharges are generally between a few tenths of a millijoule to a few millijoules.²¹ Those values are lower than the measured energy required to ignite the PSGO.

There exists no credible mechanism by which a charge separation could have occurred between Mr. Ajala, the metal container, and the conductive PSGO liquid.²² Therefore, there is no credible mechanism by which a spark could have occurred between these objects.

Dr. Hanson also hypothesizes the possibility of a spark discharge due to the pouring of the PSGO from the metal container. PSGO, as discussed in Section 4.2, is a conductive liquid. Other conductive liquids include water, ethanol, and methanol. Conductive liquids, like water or PSGO, have relaxation times below 1 millisecond indicating that any charges that do

²⁰ Level of human perception is about 1 mJ. Britton, L.G., "Avoiding Static Ignition Hazards in Chemical Operations – ACCPS Concept Book" AIChE, New Work, p 45

²¹ NFPA 77 (2014) A.3.3.17.1

²² Britton, L.G., *Avoiding Static Ignition Hazards in Chemical Operations*, Center for Chemical Process Safety, New Work, p. 102

accumulate immediately dissipate through the liquid rather than through a spark. It is for this reason that sparks are not observed when pouring beverages out of metal cans or when using a metal faucet to dispense water in a sink.

While it is possible for charge accumulation to occur in non-conductive liquids flowing through pipes, PSGO is not a non-conductive fluid and it was not poured through a pipe; therefore, Dr. Hanson's methodology and equations are flawed and unreliable.²³ Even if one were to consider his calculations, because he chooses to use the relaxation time (and hence conductivity) of acetone, his method is inconsistent with his theory. Had he used the relaxation time for xylene, he would have calculated a discharge energy well below 0.01 mJ, which is clearly insufficient to ignite PSGO vapors. This should not be surprising as pouring non-conductive fluids, such as olive oil, out of a metal container is a common experience and does not cause sparks. Even with his inappropriate use of the acetone relaxation time, the calculated 3 mJ spark energy would still have been insufficient to ignite PSGO vapors based on my testing.

Finally, Dr. Hanson's theory of a discharge due to charging of the PSGO during flow is inconsistent with the saturated vapor pressure of acetone, which is too high or too fuel rich to be ignitable in air at the ambient temperature during the incident. A reference includes an illustrative example using gasoline, which similar to PSGO has a saturated vapor pressure that is too high or too fuel rich to be ignited in air, and describes that it is not susceptible to brush discharges during pouring:

“Consider a tank being filled with a liquid such as gasoline whose equilibrium vapor concentration exceeds the UFL [upper flammability limit]. Close to the liquid surface where small brush discharges occur, the UFL will be approached or exceeded even during the early stages of filling. Ignition via small brush discharges is only probable if the vapor concentration near the surface is much less than the UFL. Hence, gasoline

²³ NFPA 77 (2014) A.10.1

vapor ignition via brush discharge is improbable even if most of the vapor space is inside the flammable range. ²⁴

Similarly, for PSGO, even if discharges could occur, they would occur in a region where the concentration of acetone vapors is several times above the upper flammability limit. Therefore, such discharges could not ignite the vapors.

3.4. Paint Removal Efficacy of PSGO

On pages 11 and 12 of his report, Dr. Hanson compares the performance of PSGO with Goof Off Heavy Duty and Mötsenböcker's Lift Off Latex Paint Remover in removing paint from tiles applied using a paint brush or similar device. Dr. Hanson concludes that the "Goof Off Heavy Duty and the Mötsenböcker's Lift Off Latex Paint Remover were as effective as Goof Off Pro in the removal of dried latex paint."

My efficacy testing results for tiles painted with a paint roller are consistent with Dr. Hanson's results for brush-painted tiles for water-based paints. Paint that is applied using a roller or a brush results in a thin layer of paint; all three products are effective when used on a thin-layer of water-based paint.

However, Mr. Ajala was not trying to remove paint that has been applied to the floor using a paint brush or a paint roller. He describes the paint as spots, the size of "the tip of a finger."²⁵ Paint droplets that fall onto a tile floor leave a thick layer of paint. When attempting to remove this thicker layer of water-based paint, my testing results demonstrate that PSGO significantly outperforms Goof Off Heavy Duty and Mötsenböcker's Lift Off Latex Paint Remover in being able to remove the paint. For oil-based paints, PSGO more effectively removed even the thin layer applied via the paint roller. Based on this testing, PSGO is the most effective product of the three tested for Mr. Ajala's purpose of removing unknown paint droplets from the kitchen's

²⁴ Britton, L.G., *Avoiding Static Ignition Hazards in Chemical Operations*, Center for Chemical Process Safety, New Work, p. 26

²⁵ Deposition of Mr. Joseph Ajala, dated December 15, 2016, pp. 89

tile floor. The Goof Off Heavy Duty and Mötsenböcker's Lift Off Latex Paint Remove were not comparable to PSGO.

Appendix A

Professional Resume and Testimony History



Timothy J. Myers, Ph.D., P.E., CFEI, CFI

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(508) 652-8572 tel | tmyers@exponent.com

Professional Profile

Dr. Myers applies chemical engineering principles to analyze industrial processes and to investigate and prevent incidents involving chemical releases, fires, and explosions. His investigations include incidents involving chemical, agricultural and industrial facilities, the warehousing and transport of hazardous chemicals, commercial and residential structures, vehicles, energy storage systems, consumer products, and burn injuries. Dr. Myers has investigated incidents involving a wide range of combustion equipment including candles, torches, heaters, ovens, furnaces, and boilers. His work in these investigations has included determining origin and cause, experimentally measuring properties of materials, numerical modeling, and evaluation of products and facilities with current and historical regulations, codes, and guidelines.

Dr. Myers has conducted engineering analysis and experimental testing involving chemical reactions, heat and mass transfer, fluid mechanics, thermodynamics, fires, and dust and gas explosions. He has testified as an expert witness in state and federal courts.

Dr. Myers has investigated several catastrophic dust explosions that have occurred throughout North America. He audits new and existing facilities for dust explosion hazards, and assists clients in developing mitigation methods. Dr. Myers is a principal member of six NFPA technical committees responsible for standards related to the prevention and mitigation of dust fires and explosions. He is the vice-chairman of the ASTM committee responsible for the development of standards to determine the ignition and flammability properties of gases, vapors, and dusts clouds and oversees testing in Exponent's Combustible Dust Testing Laboratory.

Dr. Myers has a particular interest in the stability of chemicals and chemical mixtures and their reactivity hazards. He has investigated incidents involving self-heating or thermal runaway of chemicals, the unintentional reactions of incompatible chemicals. Dr. Myers has developed test methods for assessing self-heating and the hazards of reactive chemicals. He has analyzed the effects of specific chemicals on the integrity of materials including plastics, composites, and metals.

Prior to joining Exponent, Dr. Myers was a Graduate Student Researcher at the University of California, Berkeley and Lawrence Berkeley National Laboratory. He has also worked in process engineering and process control in the pulp and paper industry.

Academic Credentials & Professional Honors

Ph.D., Chemical Engineering, University of California, Berkeley, 1999

B.S., Forest Resources—Pulp and Paper Science, University of Washington, *magna cum laude*, 1993

Golden Key National Honor Society; University of Washington Kyosti V. Sarkanen Scholarship, 1992

Technical Association of the Pulp and Paper Industry (TAPPI) Engineering Division Scholarship, 1992

TAPPI Paper and Board Manufacture Division Scholarship, 1992

Licenses and Certifications

Licensed Professional Chemical Engineer, California, #CH6329

Licensed Professional Chemical Engineer, Maine, #12065

Licensed Professional Engineer, Ohio, 74253

Licensed Professional Engineer, Georgia, PE036505

Blasting Certificate of Competency, Massachusetts, BL 7189

Certified Fire and Explosion Investigator (CFEI) in accordance with the National Association of Fire Investigators

Certified Fire Investigator (CFI) in accordance with the International Association of Arson Investigators

Fire Origin and Cause Investigation Training, California State Fire Marshal

Confined Space Entry Certification, 29 CFR 1910.146

Hazardous Waste Operation and Emergency Response Certification, 29 CFR 1910.120

Professional Affiliations

American Institute of Chemical Engineers - AIChE (Senior Member, Member of Safety & Health Division)

AIChE Boston Section - Ichthyologists (Member)

American Society for Testing and Materials — ASTM (Vice-Chairman Committee E27 Hazard Potential of Chemicals)

International Association of Arson Investigators - IAAI (Member, CFI)

IAAI, Massachusetts Chapter - MAIAAI (Member)

National Association of Fire Investigators - NAFI (Member, CFEI)

National Fire Protection Association - NFPA Nonvoting Member: Technical Correlating Committee on Combustible Dusts

- Nonvoting Member: Technical Correlating Committee on Combustible Dusts
- Chair: Committee on Agricultural Dusts responsible for NFPA 61 *Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities*
- Alternate Member: Committee on Explosion Protection Systems responsible for NFPA 67 *Guide on Explosion Protection for Gaseous Mixtures in Pipe Systems*, NFPA 68 Standard on *Explosion Protection by Deflagration Venting*, and NFPA 69 Standard on *Explosion Prevention Systems*

- Principal Member: Committee on Combustible Metals and Metal Dusts responsible for NFPA 484 *Standard for Combustible Metals*
- Principal Member Committee on Electrical Equipment in Chemical Atmospheres responsible for NFPA 496 *Standard for Purged and Pressurized Enclosures for Electrical Equipment*, NFPA 497 *Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas*, and NFPA 499 *Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas*
- Principal Member: Committee on Fundamentals of Combustible Dusts responsible for NFPA 652 *Standard on Combustible Dusts*
- Principal Member Committee on Wood and Cellulosic Materials Processing responsible for NFPA 664 *Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities*

Technical Association of the Pulp and Paper Industry - TAPPI (Member)

Town of Grafton, Massachusetts, LPG Facility "What-if" Advisory Committee

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**Four Year Testimony of
Timothy J. Myers, Ph.D., P.E., CFEI, CFI**

Four Year Testimony of Timothy J. Myers, Ph.D., P.E., CFEI, CFI			
Name of Case	Type	Docket	Year
Taylor Ferguson and Elyse Stanton v. Wal-Mart Stores, Inc. et al.	Deposition	Circuit Court of Sebastian County, Arkansas, Civil Division Case No. CV2015-0398-6	2017
Jill L. Haverman et al. v. Packaging Corporation of America	Deposition	United States District Court for the Western District of Wisconsin Case No. 15-CV-524	2017
Blake and Taylor Thatcher v. Wal-Mart Stores, Inc. et al.	Deposition and Trial	Circuit Court of Benton County, Arkansas, Civil Division Case No. CV2015-360-5	2016
Sun Chemical Corporation v. Fike Corporation and Suppression Systems Incorporated	Deposition	United States District Court for the District of New Jersey C.A. No. 2:13-cv-04069-JMV-MF	2016
Robert D. Ryan v. Case New Holland, Inc., et al.	Trial	State of Louisiana, Parish of Caldwell, 37 th Judicial District Court No. 27,358	2015
Brandon Lovelace et al. v. Acer America Corporation et al.	Deposition	Circuit Court of the Thirteenth Judicial Circuit in and for Hillsborough County, Florida Case No. 12-14523	2015
Luz Mejia and Mauricio Carvajal v. Big Lots Stores Inc., et al.	Deposition	United States District Court for the Western District of Texas, San Antonio Division C.A. No. 513-cv-504-HLH	2015
Karma Cowan v. Hewlett-Packard Company et al.	Deposition	Circuit Court of the Twentieth Judicial Circuit in and for Miami- Dade County, Florida Case No. 09-31480-CA	2015
Barbara and Rick Satterfield v. Napa Home & Garden, Inc., et al.	Deposition	United States District Court for the District of South Carolina Spartanburg Division C.A. No. 7:11-1514 MGL	2014

Four Year Testimony of Timothy J. Myers, Ph.D., P.E., CFEI, CFI			
Name of Case	Type	Docket	Year
Secretary of Labor, U.S. Dept. of Labor v. Cooper Tire & Rubber Company	Deposition	Occupational Safety and Health Review Commission OSHRC Docket No. 11-0079	2013
Secretary of Labor, U.S. Dept. of Labor v. Cooper Tire & Rubber Company	Deposition and Trial	Occupational Safety and Health Review Commission OSHRC Docket No. 11-1588	2013
Lieb et al. v. C-V Oil Company, Inc.	Deposition	State of Vermont Superior Court Windsor Unit Civil Division Docket No. 193-4-12 Wrcv	2013
Air Products and Chemicals, Inc. v. Ashland, Inc., et al.	Trial	Court of Common Pleas of Montgomery County, Pennsylvania No. 06-06255	2013
Milford Fabricating Company, Inc. v. Amada America, Inc.	Deposition	United States District Court for the District of Connecticut C.A. No. 3:11-CV-00435 (SRU)	2013
Secretary of Labor, U.S. Dept. of Labor v. AL Solutions, Inc.	Deposition	Occupational Safety and Health Review Commission OSHRC Docket No. 11-1764	2013

Compensation

Exponent, Inc. is compensated at \$460.00 per hour for the time of Dr. Myers in 2017.

Appendix B

Materials Reviewed

Appendix B – Materials Reviewed

1. Initial Summons and Complaint
2. Notice of Removal United States District Court, Southern District of New York
3. Notice of Removal Supreme Court of the State of New York, County of Bronx
4. Answer & Affirmative Defenses of W.M. Barr & Company, Inc.
5. Answer & Affirmative Defenses of Home Depot U.S.A., Inc.
6. Plaintiffs' FRCP Rule 26(a) Disclosures
7. Defendant Home Depot U.S.A., Inc.'s Responses & Objections to Plaintiffs' Request for Production of Documents
8. Home Depot Other Incident Report Redacted
9. Defendant W.M. Barr & Company, Inc.'s Responses & Objections to Plaintiffs' Request for Production of Documents
10. Defendant W.M. Barr & Company, Inc.'s Amended Responses & Objections to Certain Requests for Production of Documents
11. Defendant Home Depot U.S.A., Inc.'s Responses & Objections to Plaintiffs' Second Request for Production of Documents
12. Plaintiffs' Second Request for Production of Documents
13. Defendant W.M. Barr & Company, Inc.'s Responses & Objections to Plaintiffs' Second Request for Production of Documents
14. Plaintiffs' Response to Defendant W.M. Barr & Company, Inc.'s First Set of Discovery Requests
15. Plaintiffs' Response to Defendant W.M. Barr & Company, Inc.'s Second Set of Discovery Requests
16. Defendant W.M. Barr & Company, Inc.'s Third Set of Discovery Requests Directed to Plaintiffs
17. Expert report of Dr. James E. Hanson, dated June 6, 2017
18. Expert report from Mr. Robert Malanga, dated June 6, 2017
19. Fire Department New York Incident Report, Incident Number 2-0546-0, dated September 1, 2015
20. Home Depot receipt for purchase of Goof-Off Professional Remover dated August 27, 2015
21. Medical records from Moses Emergency Department dated August 30, 2015
22. Tenant Agreement between Abigail Ajala and Paul Okeyo
23. Medical records from Montefiore Medical Center for Joseph Ajala dated August 30, 2015 to September 1, 2015
24. Medical records from Jacobi Medical Center for Joseph Ajala September 1, 2015 to September 15, 2016
25. Jacobi Medical Center Discharge Summary for Joseph Ajala, dated September 23, 2015

26. Deposition and exhibits of Mr. Joseph Ajala, dated December 15, 2016
27. Deposition of Ms. Abigail Ajala, dated December 15, 2016
28. Deposition of Mr. John Ajala, dated December 15, 2016
29. Deposition and exhibits of Mr. Dennis Shireman, dated January 12, 2017
30. Deposition and exhibits of Ms. Lisa Sloan, dated January 13, 2017
31. Plaintiff Disclosure photographs:
 - a. Photographs of the accident location and can of Goof Off in Set 2, Set 3 and Plaintiffs' office
 - b. Photographs of plaintiff Joseph Ajala's injuries
32. Documents provided by W.M. Barr & Company, Inc. to Plaintiffs':
 - a. Goof Off advertisements and coupons
 - b. Goof Off consumer complaints dated October 21, 2009 to July 17, 2013
 - c. Goof Off Professional Strength Remover gallon labels from 2008 to 2015
 - d. Quality Control exemplar documentation
 - e. Marketing publication approval form, Goof Off 128 oz VOC, February 2009
 - f. Goof Off packaging specifications, Item No. C0062
 - g. Goof Off Heavy Duty Batch Card dated July 7, 2015
 - h. Goof Off Professional Strength Removers Batch Card dated July 13, 2012 and May 22, 2015
 - i. Goof Off J6910 packaging specifications
 - j. Home Depot, Inc. – W.M. Barr & Company, Inc. contractual documents
 - k. Home Depot, Inc. Supplier Buying Agreement for W.M. Barr & Company, Inc.
 - l. Safety Data Sheets:
 - i. Goof Off Cleaner VOC Compliant dated April 8, 2009, April 16, 2010, June 20, 2011 and June 28, 2011
 - ii. Goof Off Professional Strength VOC Compliant dated September 13, 2012 and October 9, 2015
 - m. Discovery documents for Lopez vs. Home Depot, Inc. and W.M. Barr & Company, Inc.
 - i. Plaintiff's Initial Disclosure document
 - ii. Defendant W.M. Barr & Company, Inc.'s Answers and Objections to Interrogatories of the Plaintiff
 - iii. Defendant W.M. Barr & Company, Inc.'s Responses and Objections to the First Requests for the Production of Documents Served by the Plaintiff
 - n. Discovery documents for Rees vs. W.M. Barr & Company, Inc., Home Depot, Inc., Optum and John Doe Corporations 1-5
 - i. Plaintiffs' Initial Disclosure Document

- ii. Initial Disclosures by Defendant W.M. Barr & Company, Inc.
- iii. Initial Disclosures by Defendant Home Depot, Inc.
- iv. Plaintiffs' Answers to First Set of Discovery Requests of the Defendant W.M. Barr & Company, Inc.
- v. Plaintiffs' Answers to Second Set of Discovery Requests of the Defendant W.M. Barr & Company, Inc.

33. Safety Data Sheets of the following products:

- a. Goof Off Professional Strength VOC Compliant dated January 12, 2015
- b. Goof Off Heavy Duty 3% VOC dated April 16, 2015
- c. Mötsenböcker's Lift Off #5 Latex Paint Remover dated May 8, 2015

34. Label of Behr Premium Plus interior flat paint & primer in one

35. Label of Glidden Diamond pure white flat enamel interior paint & primer in one

36. Label of Behr oil-base semi-gloss enamel paint

37. Label of Behr alkyd satin enamel paint

38. Inspection photographs by R. Thomas Long, Jr. P.E., CFEI, Exponent dated August 17, 2016

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Appendix C

Paint Removal Tests – Full Set of Results

Appendix C – Paint Removal Tests – Full Set of Results

Figures 1 through 4 are photographs of the painted tiles before and after the attempted paint removal using the following products:

- Goof Off Professional Strength Remover (labeled “Pro” on tiles)
- Goof Off Heavy Duty (labeled “HD” on tiles)
- Mötsenböcker’s Latex Paint Remover (labeled “LO” on tiles)

The elapsed time of attempted removal of the paint is noted on the tile near the “Pro” mark. These values are reported in Tables 1 and 2.

Table 1. Time to remove painted circular pattern with PSGO (in seconds)

Tester \ Paint	A	B	C	D
I	4 s	3 s	13 s	4 s
II	5 s	4 s	13 s	5 s
III	3 s	3 s	15 s	6 s

Table 2. Time to remove paint spots with PSGO (in seconds)

Tester \ Paint	A	B	D
I	21 s	51 s	24 s
II	27 s	27 s	19 s
III	25 s	21 s	23 s

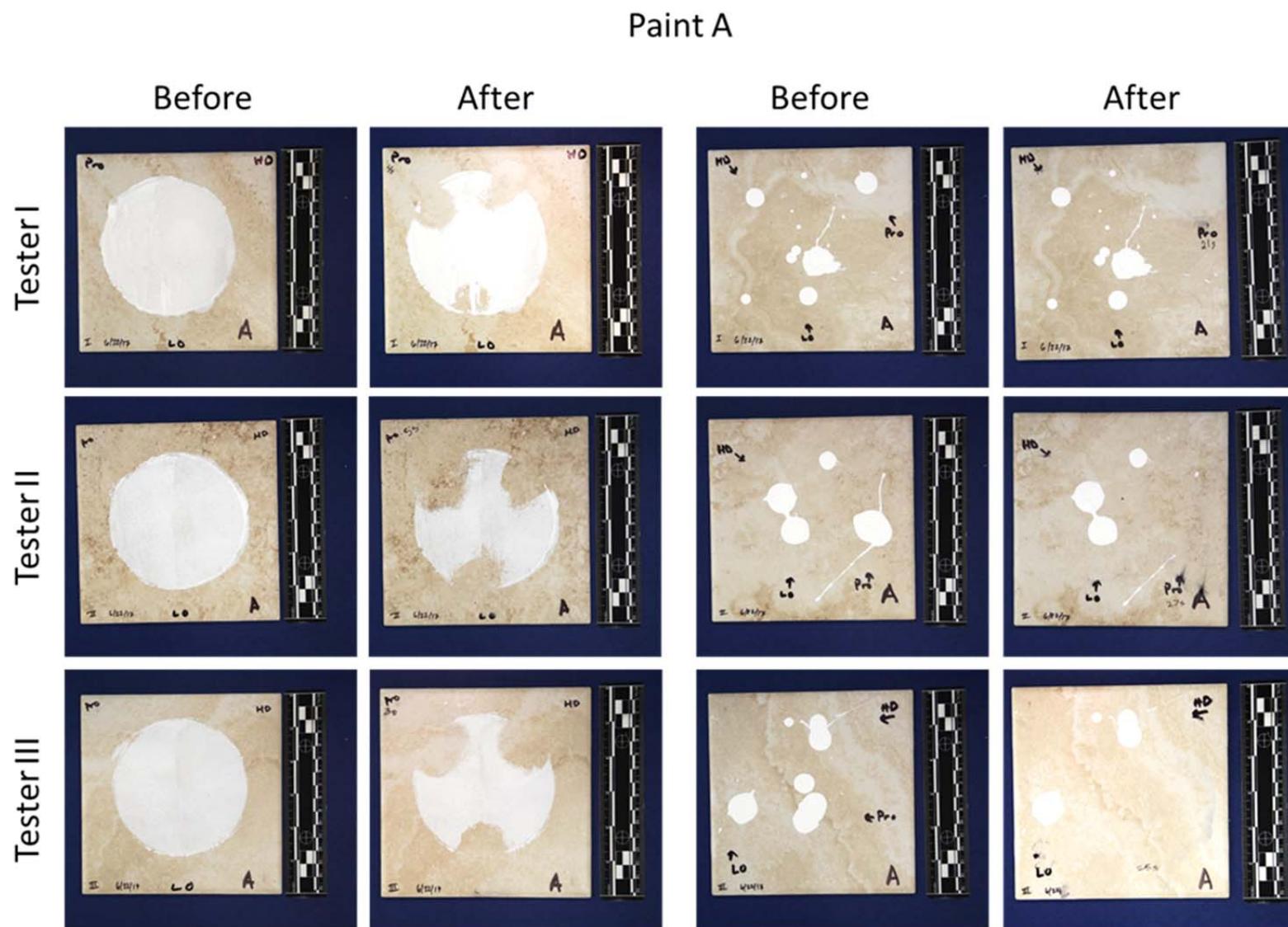


Figure 1. Paint A results

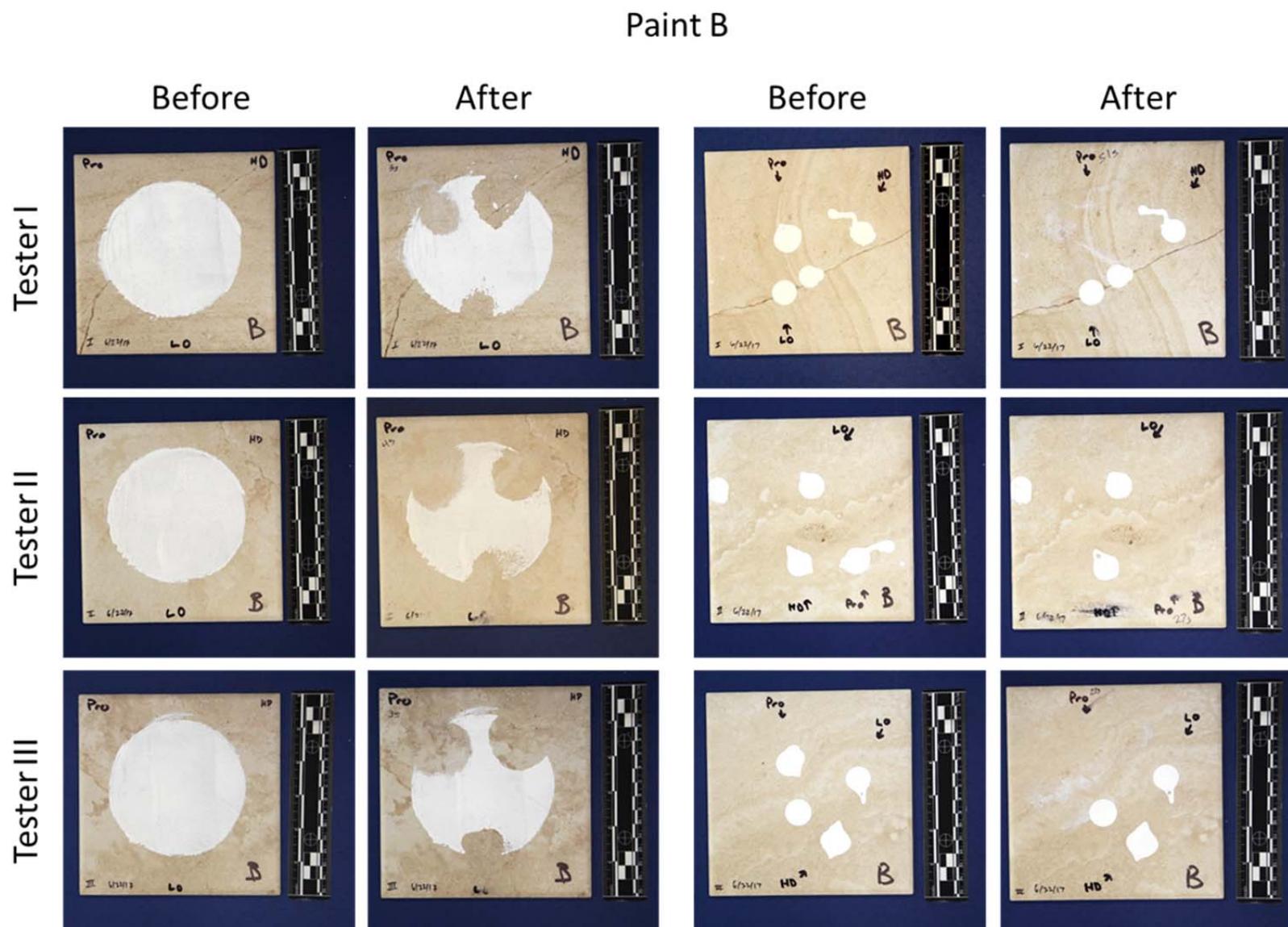


Figure 2. Paint B results

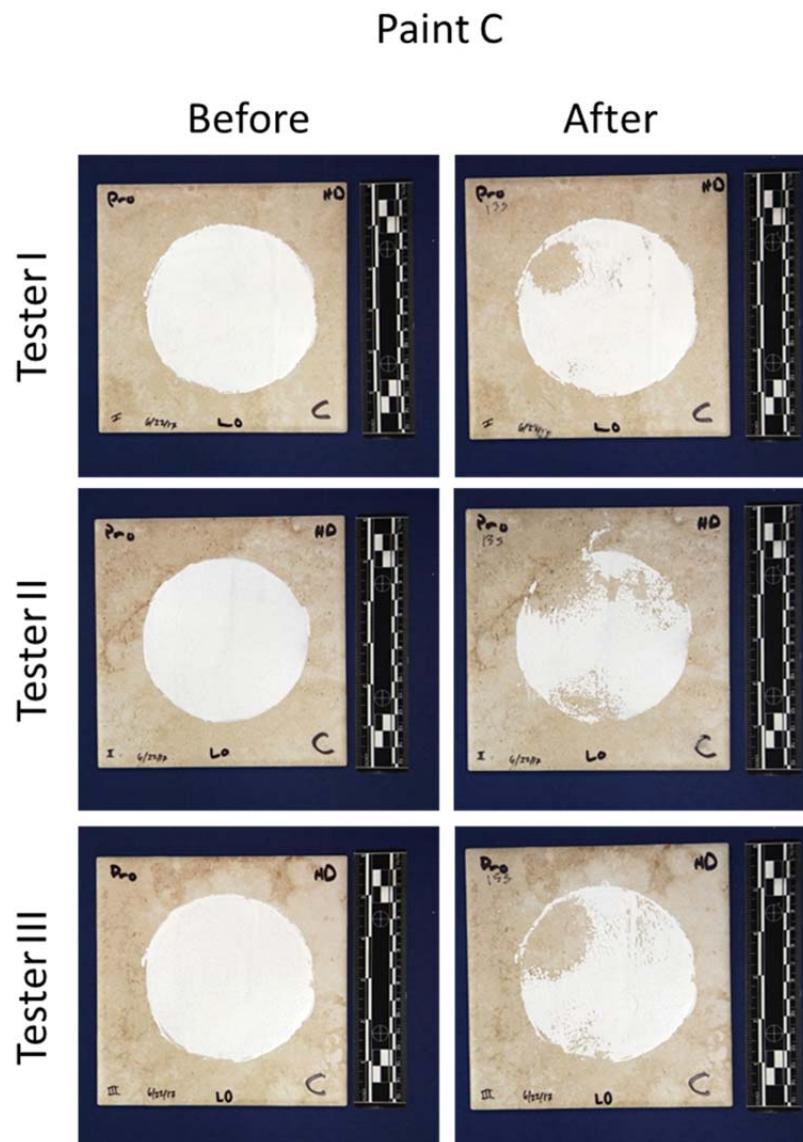


Figure 3. Paint C results. Paint drop test was not conducted on Paint C because drops were not fully cured.

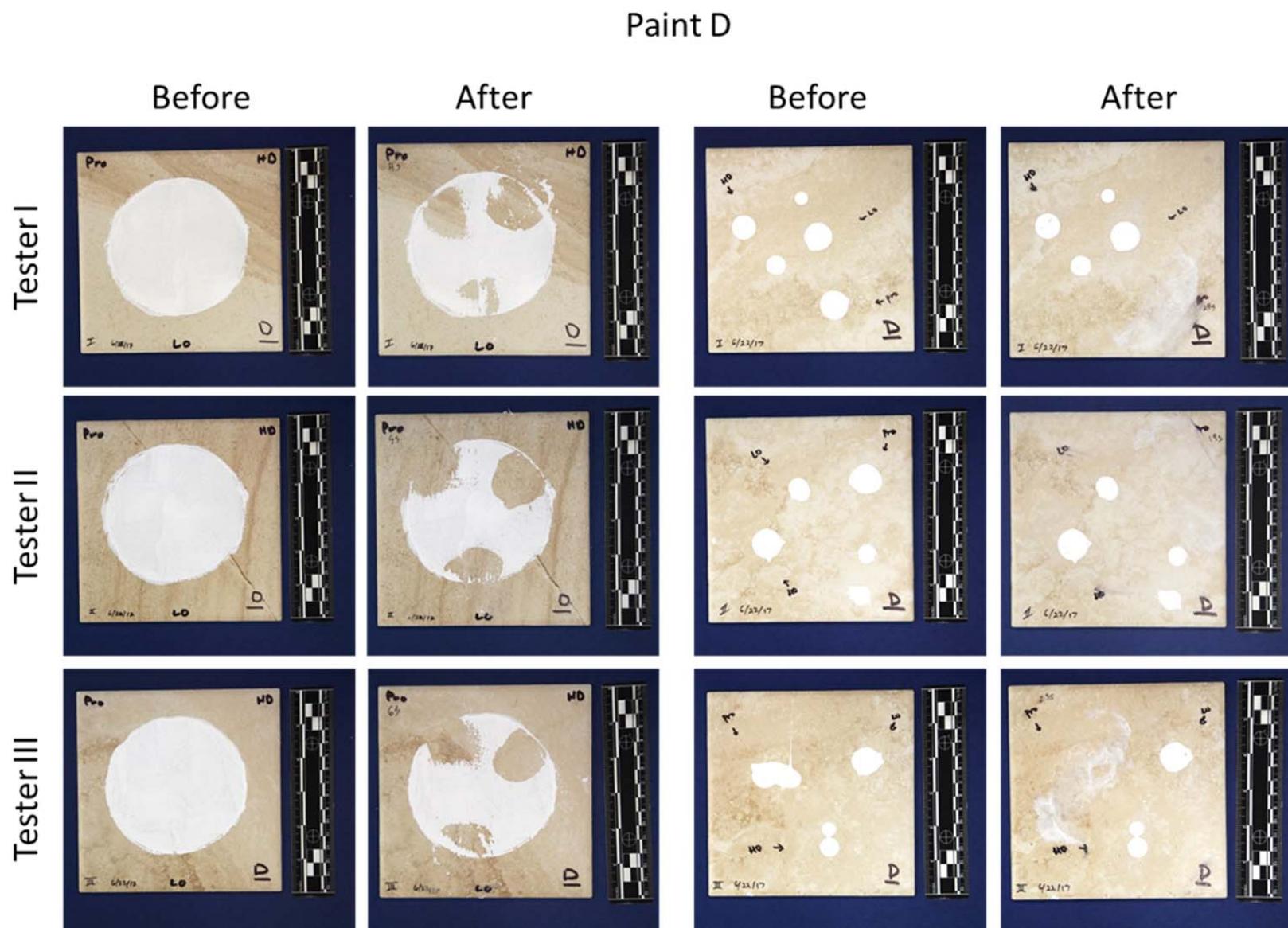


Figure 4. Paint D results